

Special Metals NIMONIC® Alloy 263

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

A precipitation-hardenable nickel-chromium-cobalt alloy with an addition of molybdenum for solid-solution strengthening. It has high strength and corrosion resistance along with good formability and high-temperature ductility in welded structures. The alloy is especially suitable for sheet applications. Used in gas turbines for rings, casings, and various sheet fabrications. Standard product forms are round, flats, extruded section, tube, plate, sheet, and wire. Data provided by the manufacturer, Special Metals.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Special-Metals-NIMONIC-Alloy-263.php

Physical Properties	Metric	English	Comments
Density	8.36 g/cc	0.302 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	760 MPa	110000 psi	Precipitation Hardened prior to test
	@Temperature 650 Å°C	@Temperature 1200 Å°F	
Tensile Strength, Yield	940 MPa	136000 psi	Precipitation Hardened. Value at room temperature
	@Temperature 23.0 Å°C	@Temperature 73.4 Å°F	
Elongation at Break	39 %	39 %	Precipitation Hardened
	@Strain 0.200 %	@Strain 0.200 %	
Tensile Strength, Yield	450 MPa	65300 psi	Precipitation Hardened prior to test
	@Strain 0.200 %, Temperature 650 Å°C	@Strain 0.200 %, Temperature 1200 Å°F	
Elongation at Break	30 %	30 %	Precipitation Hardened prior to test.
	@Temperature 650 Å°C	@Temperature 1200 Å°F	

Thermal Properties	Metric	English	Comments
CTE, linear	10.3 Åµm/m-Å°C	5.72 Åµin/in-Å°F	
	@Temperature 20.0 - 100 Å°C	@Temperature 68.0 - 212 Å°F	
Specific Heat Capacity	0.461 J/g-Å°C	0.110 BTU/lb-Å°F	
Thermal Conductivity	11.7 W/m-K	81.2 BTU-in/hr-ftÅ²-Å°F	

Thermal Properties	Metric	English	Comments
Melting Point	1300 - 1355 Å°C	2370 - 2471 Å°F	
Solidus	1300 Å°C	2370 Å°F	
Liquidus	1355 Å°C	2471 Å°F	

Component Elements Properties	Metric	English	Comments
Al + Ti	2.4 - 2.8 %	2.4 - 2.8 %	
Aluminum, Al	<= 0.60 %	<= 0.60 %	
Boron, B	<= 0.0050 %	<= 0.0050 %	
Carbon, C	0.040 - 0.080 %	0.040 - 0.080 %	
Chromium, Cr	19 - 21 %	19 - 21 %	
Cobalt, Co	19 - 21 %	19 - 21 %	
Copper, Cu	<= 0.20 %	<= 0.20 %	
Iron, Fe	<= 0.70 %	<= 0.70 %	
Manganese, Mn	<= 0.60 %	<= 0.60 %	
Molybdenum, Mo	5.6 - 6.1 %	5.6 - 6.1 %	
Nickel, Ni	49 %	49 %	As remainder
Silicon, Si	<= 0.40 %	<= 0.40 %	
Sulfur, S	<= 0.0070 %	<= 0.0070 %	
Titanium, Ti	1.9 - 2.4 %	1.9 - 2.4 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000115 ohm-cm	0.000115 ohm-cm	
Magnetic Permeability	1.0008	1.0008	at 200 oersted (15.9 kA/m)

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